UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/773,147	01/31/2001	Arnaud Gesnot	PHFR000011	5941

24737	7590	01/24/2005

PHILIPS INTELLECTUAL PROPERTY & STANDARDS
P.O. BOX 3001
BRIARCLIFF MANOR, NY 10510

EXAMINER
THOMPSON, JAMES A

ART UNIT	PAPER NUMBER
2624	

DATE MAILED: 01/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

PTO-90C (Rev. 10/03)

	Application No.	Applicant(s)
Office Action Summary	09/773,147	GESNOT, ARNAUD
	Examiner	Art Unit	
	James A Thompson	2624	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE _3_ MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
  Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on _17 November 2004_.

2a)☒ This action is **FINAL.**   2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☐ Claim(s) _____ is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) _1-4_ is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on _31 January 2001_ is/are: a)☒ accepted or b)☐ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☐ All   b)☐ Some * c)☐ None of:

      1.☐ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☐ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
    Paper No(s)/Mail Date _____.

4)☐ Interview Summary (PTO-413)
    Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Response to Arguments

1.   Applicant's arguments, see page 4, line 3, filed 17
November 2004, with respect to the rejection of claim 2 under 35
U.S.C. §112, 2nd paragraph, have been fully considered, along
with the corresponding amendment to claim 2, and are persuasive.
The rejection of claim 2 under 35 U.S.C. §112, 2nd paragraph,
listed in items 2-3 of the first office action, dated 19 August
2004, has been withdrawn.

2.   Applicant's arguments filed 17 November 2004 have been
fully considered but they are not persuasive.

   Regarding page 4, lines 4-15: Applicant's arguments are
based on the amendments that have been made to claim 1 and not
to claim 1 as originally filed.   Therefore, Applicant is
referred to the prior art rejections below which address the
arguments presented on page 4, lines 10-15 of Applicant's
arguments.

   Regarding page 4, lines 16-22: Examiner has not argued or
suggested that the difference signal shown in figure 3C of Jung
designates the correction area.   As set forth on page 6, lines
5-8 of said first office action, the difference signal shown in
figure 3C of Jung denotes the region of discontinuity between
image blocks (column 3, line 67 to column 4, line 4 of Jung).
As is well-known in the art, image blocks are predefined areas
of the overall image.   Thus, the difference signal shown in
figure 3C of Jung denotes the area that needs to be corrected,
since said difference signal can shown large distortions due to
quantization (column 4, lines 1-4 of Jung).

The remainder of Applicant's arguments are directed to the amendments made to claim 1. Therefore, Applicant is directed to the prior art rejections below.

Claim Rejections - 35 USC § 102

3.   The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless –
> (b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4.   Claim 1 is rejected under 35 U.S.C. 102(b) as being anticipated by Moronaga (US Patent 5,229,864).

Regarding claim 1: Moronaga discloses a method of processing an input signal (column 3, lines 36-37 of Moronaga), said input signal comprising said blocks (column 3, lines 37-39 of Moronaga). Said blocks comprise pixels of digital picture data (column 3, lines 36-39 of Moronaga), which, by the definition of digital pixels, must be n-bit binary input samples, with n being an integer.

Said method comprises a low pass filtering step applied to the input signal (figure 12(300) and column 11, lines 21-23 of Moronaga), which results in a filtered signal comprising filtered samples (column 11, lines 23-27 of Moronaga); and a determination step (figure 12(18) of Moronaga) for determining a correction area around block boundaries (column 4, lines 9-16 of Moronaga), said determination step including computing mask values (column 11, lines 21-23 of Moronaga) associated with the input samples (column 11, lines 23-27 of Moronaga), said correction area corresponding to an area where the mask values

are different from zero (column 11, lines 21-27 of Moronaga).
The combining section (figure 12(18) of Moronaga) combines 8x8
pixel blocks (column 4, lines 9-10 of Moronaga), thus defining a
correction area, for correcting distortion between nearby blocks
(column 4, lines 11-16 of Moronaga). A low-pass filter is used
for correction of the correction area (column 11, lines 21-23 of
Moronaga). As is well-known in the art, a low-pass image filter
filters the image pixel data over an area. In Moronaga, the
area is the correction area. Since the low-pass filtering is
performed based on the activity of the correction area (column
11, lines 23-27 of Moronaga), the mask values of the low-pass
filter are therefore associated with the input samples. Since,
as is well-known in the art, low-pass filters distinguish
between high frequency components and low frequency components
and pass the low frequency components, said low-pass filter must
inherently have mask values that are non-zero. Otherwise, there
is no distinguishing between low frequency components and high
frequency components.

Said method further comprises a correction step for adding
a random binary number (figure 12(302) of Moronaga) comprising
at least one bit to the filtered samples belonging to the
correction area, which results in an output signal (column 12,
lines 50-53 of Moronaga). Said random noise inherently
comprises at least one bit in order to exist as an actual
digital number.

Claim Rejections - 35 USC § 103

5.   The following is a quotation of 35 U.S.C. 103(a) which
forms the basis for all obviousness rejections set forth in this
Office action:

(a) A patent may not be obtained though the invention is not
identically disclosed or described as set forth in section 102 of this
title, if the differences between the subject matter sought to be
patented and the prior art are such that the subject matter as a whole
would have been obvious at the time the invention was made to a person
having ordinary skill in the art to which said subject matter pertains.
Patentability shall not be negatived by the manner in which the
invention was made.

6.   Claim 2 is rejected under 35 U.S.C. 103(a) as being
unpatentable over Moronaga (US Patent 5,229,864) in view of Jung
(US Patent 5,732,159).

Regarding claim 2: Moronaga discloses applying a filtering
step (figure 12(300) of Moronaga) to the signal input into said
filtering step block (column 11, lines 21-23 of Moronaga) around
block boundaries (column 11, lines 25-29 of Moronaga); and
adding a random binary number to the filtered samples that are
input into the random noise addition block (column 11, lines 30-
35 of Moronaga), which results in an output signal (column 11,
lines 37-39 and lines 44-45 of Moronaga).

Moronaga does not disclose expressly multiplying the input
samples by a power of 2, which results in a modified signal
comprising modified samples of m-bit binary numbers; a computing
sub-step of mask values equal to the m-n least significant bits
of the filtered samples; dividing the filtered samples by said
power of 2; and specifically executing said step of adding a
random binary number after said filtered samples have been
divided by said power of 2 and when the mask values are
different from zero.

Jung discloses multiplying the input samples by a power of
2 (figure 2; and column 2, equation 1 and lines 56-61 of Jung).
Since the filtered binary number represents fractional values,
said fractions being ¼, ½ or ¾ (figure 2; figure 3B and column
2, lines 56-61 of Jung), two more bits are needed to represent

said numbers, said bits being the two least significant bits.
As a pure binary number, and thus representing a binary integer,
the modified values are multiplied by four when two extra bits
are added, and then a value of 00 (binary), 01(binary), 10
(binary) or 11 (binary) is added or subtracted (figures 3A-3B
and column 2, lines 58-61 of Jung). Therefore, said step of
multiplying results in a modified signal comprising modified
samples of m-bit numbers. For the purpose of greater clarity,
an example is given below. Said example is taken from the
alterations made to the input signal shown in figure 3A, which
are reflected in the output shown in figure 3B, particularly the
column above the "1" in "14" in both of said figures. Said
column from figure 3A-3B displays a value that is altered from
126 to 125.75.

126 (decimal) written as a binary number is 1111110
(binary). 125.75 written as a binary number is 1111101.11
(binary). However, since there are no decimal points in a real
computer binary representation, the pure binary number used to
represent 125.75 is 111110111 (binary), which translates to an
equivalent decimal value of 503. 126 (decimal) written as a
binary number using the same number of representative bits is
written as 1111110.00 (binary), which taken as a pure binary
number is 111111000 (binary), which translates to 504 (decimal).
The binary representation of 126.00 (decimal) as a pure binary
number using the same number of bits as 125.75 (decimal), is a
binary number four times the value of the original, unaltered
representation of 126 (decimal).

The difference signal (figure 3C and column 2, lines 62-67
of Jung), which corresponds to the least significant (m-n) bits,
denotes the region of discontinuity between image blocks (column

3, line 67 to column 4, line 4 of Jung), and thus the area that needs to be corrected.

Moronaga and Jung are combinable because they are from the same field of endeavor, namely the mitigation of blocking effects in image signals. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to use the filtering method and increased number of representative bits to determine the region of discontinuity between image blocks, as taught by Jung. Said determination would then be used in correction area determination performed by Moronaga. Said random binary numbers would then be added to the resultant pixel values. Since the output of Moronaga is limited to a range of 0 to 255 to represent the image (column 11, lines 40-44 of Moronaga), and thus eight bits, the random number would therefore be added to an 8-bit number (column 11, lines 41-42 of Moronaga). Therefore, with an output of eight bits, the two least significant bits representing the fraction of the pixel value would be dropped, thus dividing the pure binary number by a factor of four using the same logic discussed above. The motivation for doing so would have been to reduce blocking effects (column 1, lines 35-37 of Jung). Therefore, it would have been obvious to combine Jung with Moronaga to obtain the invention as specified in claim 2.

7.   Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Moronaga (US Patent 5,229,864) in view of Nakaya (US Patent 6,295,376 B1).

Regarding claim 3: The arguments regarding claim 1 are incorporated herein. Moronaga discloses a computer program product (figure 12 of Moronaga) that comprises a set of

instructions that, when loaded, carries out the method of claim
1 (column 11, lines 10-11 and lines 16-20 of Moronaga). The
embodiment of the invention shown in figure 12 of Moronaga is
used to correct distortion in digital pixel data (column 11,
lines 16-20 of Moronaga). Some form of computer program product
embodied in some form of computer memory is required to process
said digital pixel data, each of the sections of the embodiment
in figure 12 of Moronaga comprising a section of the computer
program product.

Moronaga does not disclose expressly that said computer
program product is for a television receiver and is loaded into
a television receiver.

Nakaya discloses installing an image processing device into
a television receiver (column 12, lines 15-17 of Nakaya).

Moronaga and Nakaya are combinable because they are from
the same field of endeavor, namely video image data processing.
At the time of the invention, it would have been obvious to a
person of ordinary skill in the art to install the computer
program product of Moronaga into a television receiver and use
said computer program product for said television receiver, as
taught by Nakaya. The motivation for doing so would have been
to have the computer programming product in a device that is
capable of receiving and displaying digital image data (column
12, lines 27-31 of Nakaya). Therefore, it would have been
obvious to combine Nakaya with Moronaga to obtain the invention
as specified in claim 3.

Regarding claim 4: The arguments regarding claim 1 are
incorporated herein. Moronaga discloses a computer program
product (figure 12 of Moronaga) that comprises a set of
instructions that, when loaded, carries out the method of claim

1 (column 11, lines 10-11 and lines 16-20 of Moronaga). The embodiment of the invention shown in figure 12 of Moronaga is used to correct distortion in digital pixel data (column 11, lines 16-20 of Moronaga). Some form of computer program product embodied in some form of computer memory is required to process said digital pixel data, each of the sections of the embodiment in figure 12 of Moronaga comprising a section of the computer program product.

Moronaga does not disclose expressly that said computer program product is for a set-top-box and is loaded into a set-top-box.

Nakaya discloses installing an image processing device into a set top box (column 12, lines 21-23 of Nakaya). Moronaga and Nakaya are combinable because they are from the same field of endeavor, namely video image data processing. At the time of the invention, it would have been obvious to a person of ordinary skill in the art to install the computer program product of Moronaga into a set top box and use said computer program product for said set top box, as taught by Nakaya. The motivation for doing so would have been to have the computer programming product in a device that is capable of receiving and displaying digital image data (column 12, lines 27-31 of Nakaya). Therefore, it would have been obvious to combine Nakaya with Moronaga to obtain the invention as specified in claim 4.

Conclusion

8.   Applicant's amendment necessitated the new ground(s) of
rejection presented in this Office action.   Accordingly, **THIS
ACTION IS MADE FINAL**.   See MPEP § 706.07(a).   Applicant is
reminded of the extension of time policy as set forth in 37
CFR 1.136(a).

A shortened statutory period for reply to this final action
is set to expire THREE MONTHS from the mailing date of this
action.   In the event a first reply is filed within TWO MONTHS
of the mailing date of this final action and the advisory action
is not mailed until after the end of the THREE-MONTH shortened
statutory period, then the shortened statutory period will
expire on the date the advisory action is mailed, and any
extension fee pursuant to 37 CFR 1.136(a) will be calculated
from the mailing date of the advisory action.   In no event,
however, will the statutory period for reply expire later than
SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier
communications from the examiner should be directed to James A
Thompson whose telephone number is 703-305-6329.   The examiner
can normally be reached on 8:30AM-5:00PM.

If attempts to reach the examiner by telephone are
unsuccessful, the examiner's supervisor, David K Moore can be
reached on 703-308-7452.   The fax phone number for the
organization where this application or proceeding is assigned is
703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James A. Thompson
Examiner
Art Unit 2624

JAT
12 January 2005

THOMAS D.
LEE
PRIMARY EXAMINER